

**Perpendicular lines:** When two lines intersect to form right angles. This means that the angles are equal to 90

To determine if two lines are perpendicular mathematically, you need to calculate their slopes. If the slope of one line is the opposite reciprocal to the other slope, then the lines are perpendicular.

Given two linear equations determine if they are perpendicular to each other:

①  $y = 5x + 6 \longrightarrow \text{slope} = 5$

②  $10x + 2y = 40 \rightarrow y = 20 - 5x \rightarrow \text{slope} = -5$

\* These two lines are NOT perpendicular since 5 is not the opposite reciprocal of -5!

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Slope

5

Opposite reciprocal  
Slope

$-\frac{1}{5}$

$$\frac{2}{3}$$

$$-10$$

$$0$$

$$-\frac{3}{2}$$

$$\frac{1}{10}$$

$$\frac{1}{0} = \text{undefined}$$

